

REMARKS

Claims 1 - 3, 6 - 8, 11 - 13, and 16 - 18 have been canceled by a prior amendment without prejudice or disclaimer of the subject matter thereof. Applicant reserves the right to pursue the subject matter of the canceled claims in the subject application and/or subsequently filed continuing applications.

Claims 15, 19, and 20 have been amended.

Claims 4, 5, 9, 10, 14, 15, 19, and 20 are present in the subject application.

In the Office Action dated January 23, 2009, the Examiner has rejected claims 4, 5, 9, 10, 14, 15, 19, and 20 under 35 U.S.C. §103(a). Favorable reconsideration of the subject application is respectfully requested in view of the following remarks.

Initially, claim 15 has been amended to correct a minor typographical and/or grammatical error, while claims 19 and 20 have been amended for slight clarifications. These amendments are presented merely to further clarify the claims, and expedite prosecution of the subject application.

The Examiner has rejected claims 4, 5, 9, 10, 14, 15, 19, and 20 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 5,809,094 (Masumoto et al.), in view of U.S. Patent No. 6,990,160 (Abe et al.).

Briefly, an embodiment of the present invention is directed toward a synchronism pattern detecting timing recorder that records a synchronism pattern detecting timing at which a synchronism pattern is detected in reception data. A synchronism decider collates the reception

data with reference data to decide whether or not the reception data is consistent in phase with the reference data. A timing generator operates, when the synchronism decider gives a decision for inconsistency in phase, for a match between the synchronism pattern detecting timing recorded in the synchronism pattern detecting timing recorder and a timing of a synchronism pattern of the expectation data. The subsequent synchronism pattern detecting timing in record is used to render the phases consistent, allowing for a rapid synchronization to be obtained.

The Examiner takes the position that the Masumoto et al. patent discloses the features recited within independent claim 4, except for a phase difference recording means for recording a phase timing difference between the first and second timings. The Examiner further alleges that the Abe et al. patent discloses these features, and that it would have been obvious to combine the Masumoto et al. and Abe et al. patents to attain the claimed invention. The Examiner takes the further position that the limitations of claims 5, 9, 10, 14, 15, 19, and 20 are disclosed by the combination of the Masumoto et al. and Abe et al. patents in the same manner described above for claim 4.

This rejection is respectfully traversed. With respect to independent claim 4, the Examiner concedes that the Masumoto et al. patent does not disclose the claimed feature of a phase difference recording means for recording a time difference between a second synchronism pattern detecting timing at which a second of the plurality of synchronism patterns is detected in the reception data and a first synchronism pattern detecting timing, as an initial one at which a first of the plurality of synchronism patterns is initially detected in the reception data. Accordingly, since the Masumoto et al. patent fails to disclose this feature, the further feature

recited within claim 4 of the timing for decision being a timing obtained by shifting the first synchronism pattern detecting timing by the time difference recorded in the phase difference recording means, when the collation and synchronism decision means gives a decision for inconsistency in phase is similarly not disclosed by the Masumoto et al. patent.

The Abe et al. patent does not compensate for the deficiencies of the Masumoto et al. patent. Rather, the Abe et al. patent discloses a reception apparatus and method. A phase of a sampling clock provided from a clock generating circuit is switched periodically and alternately with a phase difference of 180 degrees, and during a period of each phase, a timing estimating circuit estimates a symbol timing. A high-accuracy timing estimating circuit selects an estimated result with higher reliability among symbol timing estimated results obtained in respective periods, thereby enabling estimation of the symbol timing with time resolution twice a sampling period.

The Examiner relies on a section of the Abe et al. patent (i.e., at Column 22, lines 35 - 50) for disclosure of these features. However, this section does not compensate for the deficiencies of the Masumoto et al. patent. In particular, claim 4 recites the feature of recording a time difference between first and second synchronism pattern detecting timings as discussed above. In contrast, the Abe et al. patent discloses that the first and second timings are not actual times, but rather, time estimates that are not related to specific synchronism patterns as recited in the claim (e.g., See Column 2, lines 53 - 55; Column 5, lines 32 - 39; and Column 22, line 38 ("performing first timing estimation")). In addition, the Abe et al. patent discloses that the timing estimating circuit (105) estimates a symbol timing of the digital-modulated signal (e.g.,

See Column 5, lines 32 - 33), as opposed to a synchronism pattern detecting timing as recited in claim 4.

Further, the cited section of the Abe et al. patent discloses performing a first timing estimation of a received signal at a first sampling timing to output a first timing estimated result, performing a second time estimation of the received signal at a second sampling timing with a predetermined phase difference with respect to the first sampling timing to output a second timing estimated result, and switching the first and second sampling timings. Thus, the Abe et al. patent discloses switching of the first and second sampling timings, as opposed to shifting the first synchronism pattern detecting timing by the recorded time difference as recited in claim 4.

In addition, the Abe et al. patent discloses that the timing estimating circuit (105) estimates the symbol timing when the clock has the phase of 0 degrees (i.e., the first sampling timing), and estimates the symbol timing when the clock has the phase of 180 degrees (i.e., the second sampling timing) (e.g., See Column 6, lines 46 - 48). Thus, the difference between the clock phases is a predetermined amount, and the Abe et al. patent only discloses that the phase of the second sampling timing is different from that of the first sampling timing by a predetermined phase difference (e.g., See Column 2, lines 58 - 62; Column 5, lines 45 - 48; Column 6, lines 19 - 22 and 46 - 48; Column 7, lines 36 - 47; and Column 22, lines 40 - 43). Accordingly, the Abe et al. patent does not disclose determining and recording the actual time difference between the first timing and the second timing of synchronism pattern detections in the reception data as recited in claim 4, and actually teaches away from the features recited in that claim.

AMENDMENT IN RESPONSE TO OFFICE ACTION MAILED JANUARY 23, 2009  
APPLICATION NO. 10/806,256

Since the combination of the Masumoto et al. and Abe et al. patents does not disclose, teach, suggest, or otherwise render obvious, either alone or in combination, the features recited in claim 4 as discussed above, this claim is considered to be in condition for allowance. Since claims 5, 9, 10, 14, 15, 19, and 20 recite features similar to those within claim 4, these claims are considered to be in condition for allowance for substantially the same reasons discussed above for claim 4.

In view of the foregoing, Applicant respectfully requests the Examiner to find the application to be in condition for allowance with claims 4, 5, 9, 10, 14, 15, 19, and 20. However, if for any reason the Examiner feels that the application is not now in condition for allowance, the Examiner is respectfully requested to call the undersigned attorney to discuss any unresolved issues and to expedite the disposition of the application.

Filed concurrently herewith is a Petition (with payment) for an Extension of Time of Three Months. Applicant hereby petitions for any extension of time that may be necessary to maintain the pendency of this application. The Commissioner is hereby authorized to charge payment of any additional fees required for the above-identified application or credit any overpayment to Deposit Account No. 05-0460.

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